

**DETAILED ACTION*****Allowable Subject Matter***

1. The following is an examiner's statement of reasons for the indication of allowable subject matter. Please also review the prosecution history.
2. The claimed invention is directed to a system and method for remotely detecting, identifying, reporting and evaluating the presence of substances. The system comprises of the ability to airdrop a remote controllable, self-righting sensing unit that are able to obtain substance image data using a mass spectrometer. The independent claims 3 and 13 as well as their dependent claims 4, 6, 7, 9, 12 and 14 are allowed because the prior art reference used Michael Cabbage, "Mars Rovers Will 'Follow the Water'; In Two Launches – one set today – NASA is Sending Geologic Probes to the Red Planet"; Orlando Sentinel, June 8, 2003 (hereinafter "**Cabbage**") in view of National Aeronautics and Space Administration, Mars Global Surveyor Arrival Press Kit September 1997 ("**Press Kit 1997**"); National Aeronautics and Space Administration, "Mars Exploration Rover Launches" press kit June 2003 (hereinafter "**Press Kit 2003**"); **Barnes (US 6/422,508 B1)**; and **Ishizaka et al. (U.S. 5,077,010)** (Hereinafter referred to as **Ishizaka**) failed to teach or render obvious to one of ordinary skill in the art the limitations of claims 3 and 13.

The Cabbage reference teaches reporting of the Mars rover launch. The article occurs prior to the current application but after the provisional application

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and does not teach the use of a mass spectrometer for sample analysis. The Press Kit 1997 reference teaches the Mars rover Surveyor system and notes the use of laser mass spectrometry on page 13. However, the mass spectrometry was used by scientists in Antarctica in a lab in Antarctica. This mass spectrometer was not sent out unmanned remote unit and the Mars Surveyor was never airdropped. Furthermore, a mass spectrometer is not listed on page 8 as part of the spacecraft. Page 30 of the document shows only the use of a thermal emission spectrometer. There is no high level threat assessment done based on the mass spectrometer data. The Press kit 2003 was used to show inherency in the Cabbage reference however the Cabbage reference as discussed above cannot be utilized in the present application. Barnes teaches a steerable gimbal system for robotic control of imaging data. The Barnes system has the ability to obtain GPS or geographic location data. This system is not able to be remotely airdropped. Furthermore, Ishizaka teaches a long test film cassette for biochemical analysis and system for loading the same which is used for biochemical analysis. The references together or apart do not teach the claimed limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**EXAMINERS AMENDMENT**

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

These amendments were discussed via telephone with Jaclyn Alcantara on Thursday, October 13<sup>th</sup> and confirmed Authorization for this Examiner's Amendment was given in a telephone message left on Friday, October 14 2011 by Ms. Alcantara.

**Amended Claims:****1. With respect to claim 1: (Cancelled)****3. With respect to claim 3: (Currently Amended)** A method of evaluating a threat posed by a substance, the method comprising the steps of:

- (a1) airdropping one or more remotely controllable sensing units into an area containing a potentially hazardous substance, wherein the remotely controllable sensing units are spherical with an off-set center of gravity, such that the remotely controllable sensing units roll upon hitting ground to properly position various inlet and outlet ports associated with a sample collection mechanism of the remote sensing units for sample collection;
- (a2) ~~obtaining an image of the substance with the one or more remotely controllable sensing units; (a2) obtaining an image of a spectrograph of~~

the substance with one or more remotely controllable sensing units comprising a mass spectrometer;

- (a3) transmitting the image of the spectrograph of the substance from the one or more remotely controllable sensing units to a control unit configured to automatically detect and identify the substance and generate a corresponding report;
- (b) uploading the report, via the control unit, to a remote server via a system chosen from the group consisting of a cell phone network and a satellite phone network;
- (c) determining an actual geographic location of a remote sensing unit detecting the substance using a GPS device located on the remote sensing unit, communicating the actual geographic location to the control unit, and identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance;
- (d) notifying, via the control unit, the appropriate local reporting authority of the report in accordance with the appropriate local reporting policy at least some members of a hierarchy of authorities, including threat response authorities and evaluation authorities, of the report, wherein the evaluation authorities include a plurality of experts having knowledge relevant to making a high-level threat assessment;

- (e) determining, via the control unit, a hierarchy of threat evaluators, including the appropriate local reporting authority and a plurality of experts having knowledge relevant to making a high-level threat assessment; and
- (f) instructing at least some members of the hierarchy of threat evaluators to access the report on the remote server via a wide area network.

**6. With respect to claim 6: (Currently Amended)** The method as set forth in claim 3 [[1]], wherein the response authorities are chosen from the group consisting of local first responders, state agencies, state departments, regional agencies, regional departments, national departments, and national agencies.

**7. With respect to claim 7: (Currently Amended)** The method as set forth in claim 3 [[1]], wherein the evaluation authorities include experts on subjects chosen from the group consisting of medical issues relating to exposure to chemical substances, medical issues relating to exposure to biological substances, medical issues relating to exposure to radioactive substances, law, law enforcement, policy, doctrinal issues, historical cases, modeling, and simulation.

**9. With respect to claim 9: (Currently Amended)** The method as set forth in claim 3 [[1]], further comprising collecting the substance with a sample examination cassette including: a roll of filter paper for receiving the substance; a roll of film providing an impermeable barrier for isolating the substance; and an archive spool for collecting the roll of filter paper and the roll of film.

**13. With respect to claim 13: (Currently Amended)** A method of evaluating a threat posed by a substance, the method comprising the steps of:

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- (a1) airdropping one or more remotely controllable sensing units into an area containing a potentially hazardous substance, wherein the remotely controllable sensing units are positioned within an inflatable balloon-like structure which is inflated prior to airdropping the remotely controllable sensing units, wherein the inflated balloon-like structure is spherical, with an off-set center of gravity, such that the remotely controllable sensing units roll upon hitting ground to properly position various inlet and outlet ports associated with a sample collection mechanism of the remotely controllable sensing units for sample collection;
- (a2) obtaining an image of the substance with the one or more remotely controllable sensing units; (a2) obtaining an image of a spectrograph of the substance with one or more remotely controllable sensing units comprising a mass spectrometer;
- (a3) transmitting the image of the spectrograph of the substance from the one or more remotely controllable sensing units to a control unit configured to automatically detect and identify the substance and generate a corresponding report;
- (b) uploading the report, via the control unit, to a remote server via a system chosen from the group consisting of a cell phone network and a satellite phone network;
- (c) determining an actual geographic location of a remote sensing unit detecting the substance using a GPS device located on the remote sensing unit, communicating the actual geographic location to the control

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- unit, and identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance;
- (d) notifying, via the control unit, ~~the appropriate local reporting authority of the report in accordance with the appropriate local reporting policy at least some members of a hierarchy of authorities, including threat response authorities and evaluation authorities, of the report, wherein the evaluation authorities include a plurality of experts having knowledge relevant to making a high-level threat assessment;~~
  - (e) determining, via the control unit, a hierarchy of threat evaluators, including the appropriate local reporting authority and a plurality of experts having knowledge relevant to making a high-level threat assessment; and
  - (f) instructing at least some members of the hierarchy of threat evaluators to access the report on the remote server via a wide area network.

## CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heidi Riviere whose telephone number is 571-270-1831. The examiner can normally be reached on Monday-Friday 9:00am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janice Mooneyham can be reached on 571-272-6805. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Heidi Riviere/  
Examiner, Art Unit 3689